Desert Tortoise

(Gopherus agassizii)

October 2002

Desert Tortoise Characteristics

Photo: Karen Wyatt, Outdoor California.

- The Desert tortoise is the Official state reptile of California.
- It measures up to 15 inches in length, and 8 inches in width. The shell is tan to dark brown, approx. 6 inches high.
- Its front limbs are flattened and heavily scaled for digging.

Desert Tortoise Behavior

- In areas with summer rains -such as the eastern Mojave desert- Desert tortoises are active in the late summer. They emerge from their burrows in the cooler morning and late-afternoon hours of the hot summer months.
- By October, most tortoises have begun their winter hibernation.

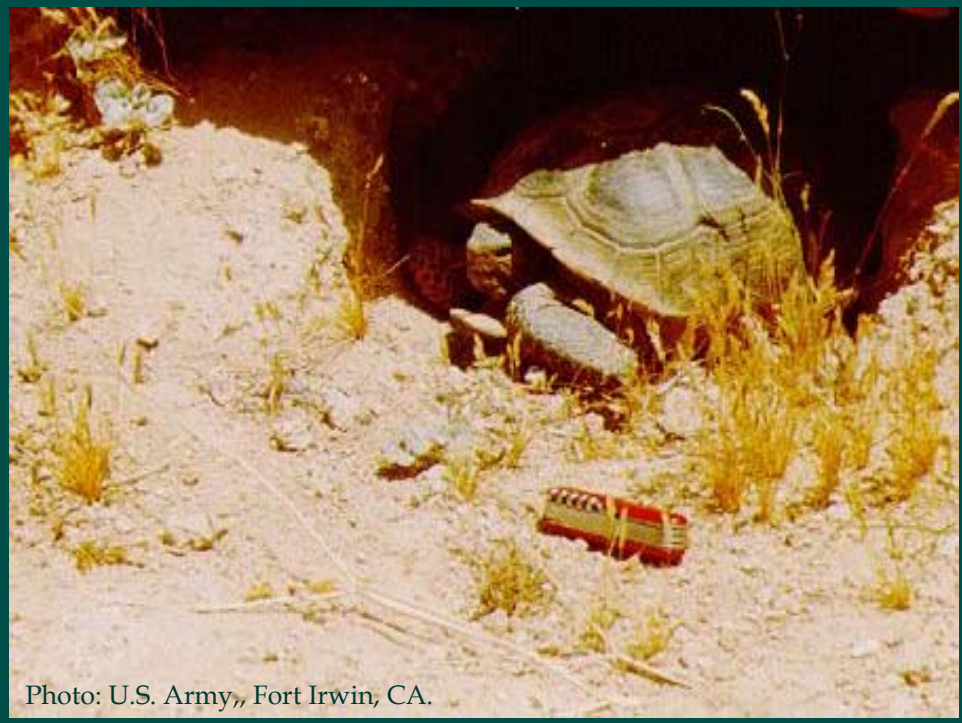


Photo: U.S. Army,, Fort Irwin, CA.

- Desert tortoises may be active at any time of the year, but most activity takes place between March and June.

Desert Tortoise Habitat

The desert tortoise is most common in desert scrub, desert wash, and Joshua tree habitats.

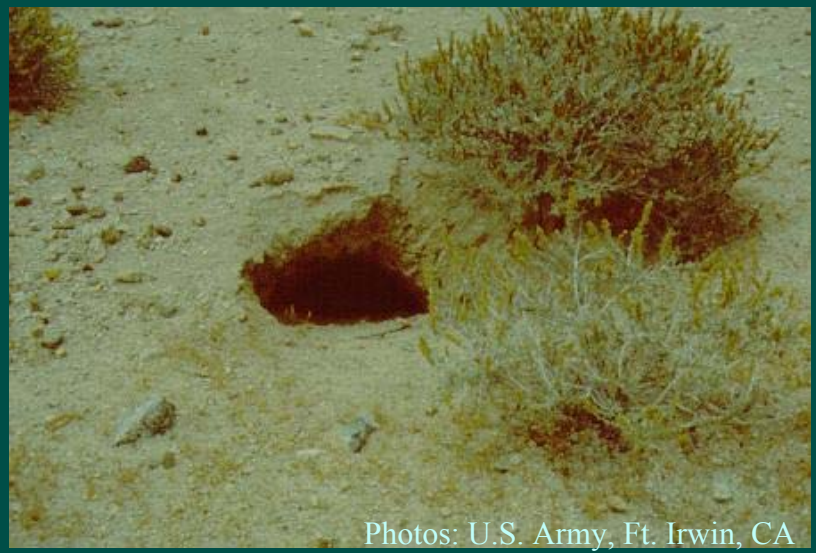
Desert Tortoise Range

Desert tortoises once ranged throughout the Mojave and Sonoran deserts of south-eastern California and northern Mexico. They still inhabit most of that range, although habitat is reduced and highly fragmented.

Current records from the California Department of Fish and Game include locations in Imperial, Inyo, Kern, Los Angeles, Riverside, and San Bernardino counties.

Cal EPA, Dept. of Pesticide Regulation

Desert Tortoise Burrows



Photos: U.S. Army, Ft. Irwin, CA

- Desert tortoises use burrows for shelter against extreme temperatures, since burrows stay relatively cool in summer and warm in winter.
- They dig their burrows in dry gravelly soil, beneath shrubs on open desert, or in the banks of washes.
- Desert tortoise burrow entrances are half-moon shaped.

Desert Tortoise Burrows

Photo: U.S. Army, Ft. Irwin, CA

- A typical Desert tortoise burrow entrance is approximately 9 inches wide by 6 inches high.
- In some desert locations, tortoise burrows can be found as part of complex burrow systems that might be simultaneously occupied by other species such as burrowing owls or antelope ground squirrels.

Desert Tortoise Tracks

Photo: U.S. Army, Ft. Irwin, CA

- Desert tortoises have very distinctive tracks, as a result of their body structure and slow walk.
- Tracks of all four feet have similar size (approx. 1 inch) and stumpy shape, with no webbing between the toes.
- Tracks appear to be almost parallel on both sides.
- Track length (gait) is not much greater than width.

Desert Tortoise
Substrate type and Tracks

- Depending on the hardness of the substrate where they are imprinted, some tracks can be more defined than others.
- In soft substrates such as loose sand, tortoise tracks appear as mere depressions.
- On firmer sand, the feet and nails are better defined.

Desert Tortoise Reproduction

There is no well defined mating season, but much of their mating occurs in April.

Between mid-May and July, females scoop nests in soft soil, often at or near their burrow entrances.

Depending on her size, a female lays 3 - 14 hard-shelled eggs about the size and shape of ping-pong balls.

Young tortoises emerge from the eggs between mid-August and October.

They grow slowly, less than 1 inch a year, reaching sexual maturity at 15 - 20 years of age.

Desert Tortoise Food and Water

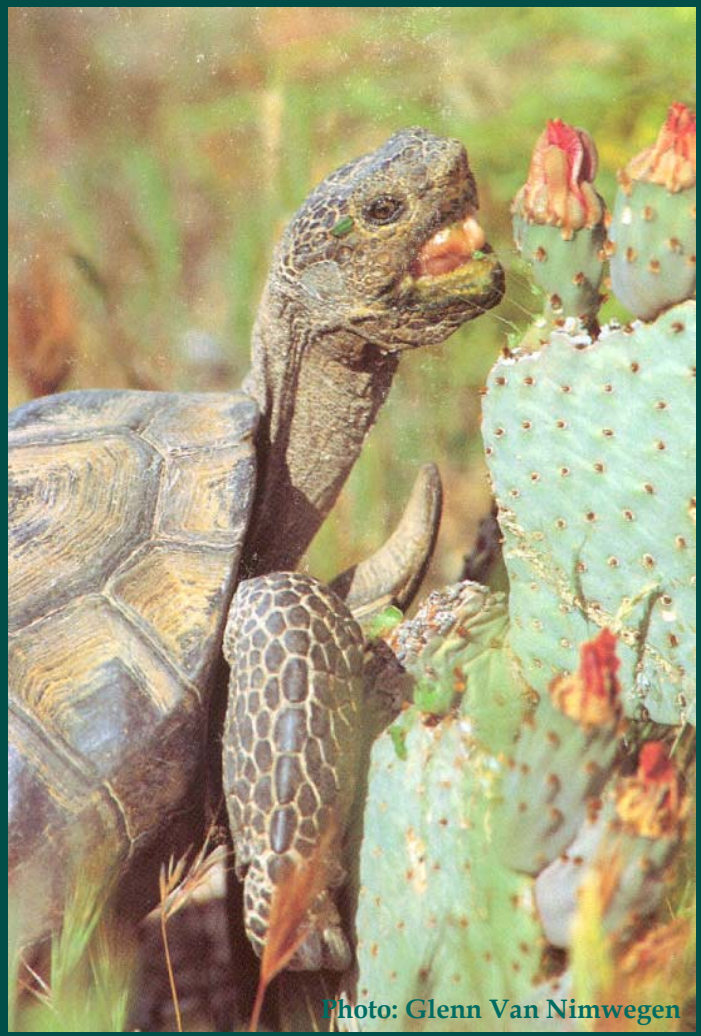


Photo: Glenn Van Nimwegen

- Tortoises are herbivorous, eating annual forbs and grasses; and prefer green vegetation over dry. In some areas, food supplies have grown scarce. Cattle and sheep foraging within tortoise habitat often feed on plants that tortoises prefer.
- Although tortoises can spend many years without drinking water, if water is available they will drink it.

Desert Tortoise Mortality Factors

- Disease: since 1988, a deadly upper respiratory disease syndrome has affected tortoises throughout the western and central Mojave desert.
- Predation of juveniles: by common ravens, kit foxes, snakes, Gila monsters, badgers, roadrunners, coyotes, and others.
- Road kills: road building for mining, energy exploration, off-highway vehicle activity, etc., have largely fragmented desert tortoise habitat and form deadly barriers for tortoise movement.

Rodent Control and Protection of Burrowing Non-target Species

- When possible, try baiting first.
- If baiting doesn't work, then try burrow fumigation.
- Before fumigating burrows, make sure you are targeting active Ground Squirrel burrows.

How do we know it is an active Ground Squirrel burrow?

- Often active Ground Squirrel burrows have large deposits of dirt accumulated around their entrance. However, not all burrows show such deposits at the entrance and have to be monitored more closely.
- Look also for debris such as nutshells, fruit rinds, and scat dispersed near the entrance.
- Inactive burrows typically have cobwebs at the entrance.

Photos: Paul Gorenzel, UC Davis

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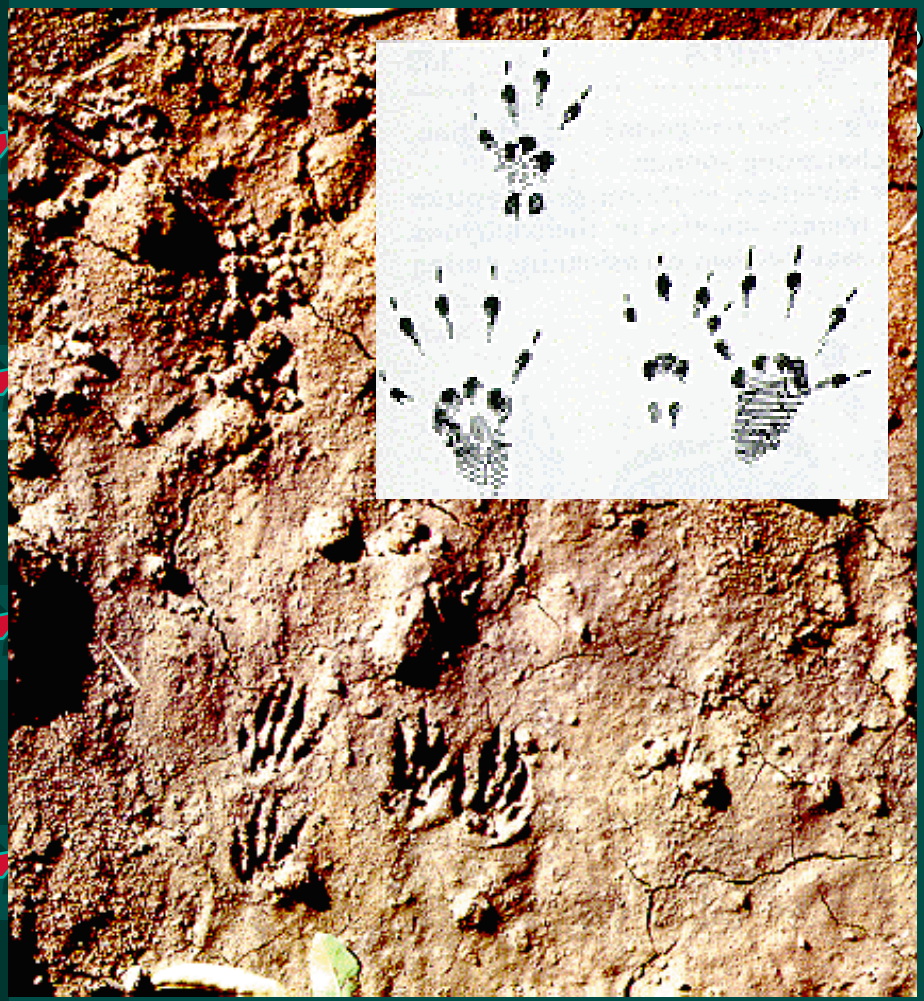

Photo: Paul Gorenzel, UC Davis

Look for tracks (see pictures).

If the substrate is hard, try softening up the area around the entrance by wetting it down, thus forming a "mud plate". Track plates made by smoking aluminum or tin sheets can also be used. Chalk can also be spread around the entrance, this creates a "more durable"soft surface where tracks can be observed.

Burrow Fumigant Use Limitations

(per Interim Measures County Bulletins)

- **Use Limitation Code 5:** "Use shall be supervised by a person (wildlife biologist, county agricultural commissioner, university extension advisor, state or federal official or others) who is trained to distinguish dens and burrows of target species from those of non-target species. Use shall occur only in the active burrows of target species. The person responsible for supervision shall be aware of the conditions at the site of application and be available to direct and control the manner in which applications are made (per Section 6406 of Title 3, California Code of Regulations). Contact your county agricultural commissioner for information on training."